CASE 2.—M. W., aged 13¾ years. Has always been small, walked when two years old, development has been poor since about six years of age, has suffered from thirst all her life, has never had scarlet fever or any other serious illness. She attended medical out-patient department when aged 6 years for blue hands and feeble action of the heart; the urine was not examined. About Christmas, 1918, the legs became crooked, when child was aged 13 years. Admitted September, 1919, for genu valgum and dwarfism; height 3 ft. 9 in. (ten inches below the average), legs deformed (see Fig. 3), knees and wrists swollen, slight beading of the ribs; urine, sp. gr. 1004, albumin a trace (tested on 30 occasions, absent twice), total quantity in 24 hours about 40 oz.; heart and arteries normal; hæmomanometer reading 90 mm., Wassermann positive (tested twice). X ray photos of bones similar to Case 1. Family history: Father and mother healthy, one of seven children, the first two died soon after birth, patient is the third, the others are healthy.

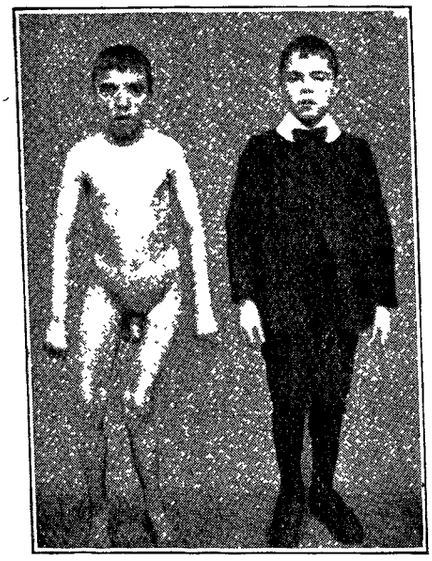

FIG. 2.—Case 1, aged 16½ years; brother, aged 12 years.

*Note.*—Case 2 has since died of uræmia; the kidneys were very small and fibrotic, weighing 220 gr. each; microscopically well-marked interstitial nephritis.

CASE 3.—Girl, aged 13 years. Admitted September, 1919, to the surgical side for genu valgum, which had developed 16 months previously. On examination height 4 ft. 4 in. (three inches below the average), pubic hair present; urine, sp. gr. 1008, albumin present, one part per 1000 (examined on 22 occasions, absent twice), total quantity about 50 oz. No cardio-vascular changes; hæmomanometer reading 100 mm. Wassermann negative. Ten years ago she was in this institution diagnosed as diabetes insipidus; urine, sp. gr. 1008 to 1010, albumin not found. She contracted scarlet fever and was transferred to the isolation hospital. The mother says she has always been thirsty and the legs weak, but was otherwise well; had had an attack of measles. Family history: Father and mother healthy, one healthy brother, one brother died of heart disease.

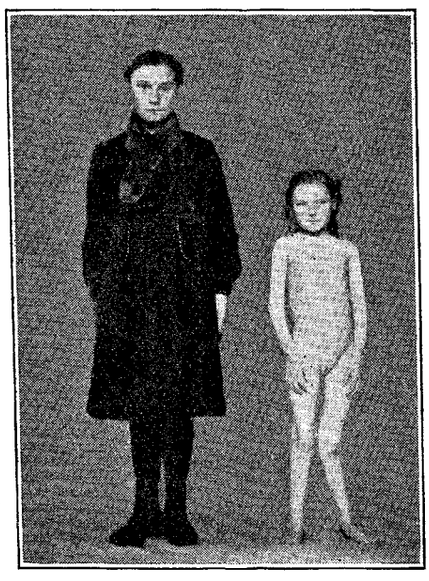

FIG. 3.—Case 2, aged 13 years; sister, aged 11 years.

*Facts Showing the Insidious Nature of the Disease.*

The following facts, which appear in the notes of the cases, may be selected to emphasise the insidious nature of the disease.

(*a*) Case 1 was diagnosed at my out-patient department, aged 12½ years, with straight legs; he attended for a month or two and returned three and a half years later on account of recently developed genu valgum.

(*b*) Case 2 attended as an out-patient under one of my late colleagues seven years ago for "weak action of the heart" and blue hands; urine not examined.

(*c*) Case 3 was admitted to this institution ten years ago, diagnosed as diabetes insipidus, with urine of low specific gravity free from albumin. She was sent up this time as a surgical case of genu valgum.

*References.*—1. H. Barber, Brit. Med. Jour., November, 1913. 2. H. Barber, THE LANCET, 1918, i., 142.

## AN IMPROVED TECHNIQUE FOR THE STAINING OF SPUTUM FOR TUBERCLE BACILLI.

BY A. DISTASO, D.SC.

THE routine examination of sputa for tubercle bacilli conducted on any large number of specimens precludes the use of the many methods of concentration, of which the antiform method is probably the best. The errors inherent in the ordinary spread slide method are numerous, and no doubt account for the unsatisfactory results obtained. The method here outlined overcomes some of the difficulties and raises the percentage of positive results by at least 25 per cent., besides affording a film which is restful to the eye and easy of manipulation. It takes less time in execution than the ordinary method. The method allows for twice the usual amount of sputum, secures the easy solution of the tough muco-purulent pellets, and gives an even film and a very transparent counterstain.

A thick portion of the sputum or several muco-purulent pellets are selected and transferred to the slide. One drop of 5 per cent. NaOH is added and the sputum emulsified, with the aid of heat, into a transparent gelatinous mass, which is spread evenly and set to dry in the incubator. When perfectly dry it is immersed in fuchsin, warmed to incubator temperature, and allowed to remain in the incubator for 15 minutes. It is then washed in equal parts of Esbach solution and water, decolorised with 25 per cent. nitric acid until faintly pink, and then washed in water, in 60 per cent. alcohol, and then again in water. The counterstain used is malachite-green (1 part of saturated alcoholic solution in 19 parts of water) for 30 seconds to one minute, and the slide is rinsed and dried.

Six thousand sputa have been examined both by the routine method and by this method, in which positive films show two to three times the number of bacilli. In my statistics the ordinary method yielded one positive film in four, in the new method one positive in three. Malachite-green gives a soft pleasing ground-work in strong contrast to the bacilli and materially lessens the labour of the search. Large numbers of slides can be manipulated in mass.

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